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*SPECIAL ISSUE*

**LIGHT SCATTERING BY NONSPHERICAL PARTICLES**

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## PREFACE

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Improved understanding of electromagnetic scattering by nonspherical particles is important to many science and engineering disciplines and was the subject of the Conference on Light Scattering by Nonspherical Particles: Theory, Measurements, and Applications. The conference was held 29 September–1 October 1998 at the Goddard Institute for Space Studies in New York City and brought together 115 participants from 18 countries. The main objective of the conference was to highlight and summarize the rapid advancements in the field, including numerical methods for computing the single and multiple scattering of electromagnetic radiation by nonspherical and heterogeneous particles, measurement approaches, knowledge of characteristic features in scattering patterns, retrieval and remote sensing techniques, nonspherical particle sizing, and various practical applications.

The conference consisted of twelve oral and one poster sessions. The presentations were loosely grouped based on broad topical categories. In each of these categories invited review talks highlighted and summarized specific active areas of research. To ensure a high-quality conference, all abstracts submitted had been reviewed by members of the Scientific Organizing Committee for technical merit and content. The conference program was published in the June 1998 issue of the Bulletin of the American Meteorological Society and is available on the World Wide Web at <http://www.giss.nasa.gov/~crmim/conference/program.html>. Authors of accepted papers and review presentations contributed to a volume of preprints published by the American Meteorological Society<sup>1</sup> and distributed to participants at the conference.

The Organizing Committee of the Conference solicited high quality, full-size papers for two feature issues of the Journal of Quantitative Spectroscopy and Radiative Transfer (JQSRT) and the Journal of Geophysical Research – Climate and Physics of the Atmosphere (JGR). The special JQSRT

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issue welcomed papers on all aspects of light scattering by nonspherical and heterogeneous particles and its various applications, including original research papers, surveys and summaries of previously published works, and state-of-the-art reviews. The special JGR feature included original research papers on remote sensing and geophysical applications of electromagnetic scattering by nonspherical particles as well as papers on theoretical and experimental techniques that find applications in geophysics. All papers have been subject to peer review and have been treated with the same scientific scrutiny as any manuscripts submitted to JQSRT or JGR. In addition, the invited reviews formed a monograph on electromagnetic scattering by nonspherical particles which will be published by Academic Press.<sup>2</sup>

The conference was the third in the series of international meetings on Light Scattering by Nonspherical particles. The first two workshops were convened by Joop Hovenier in Amsterdam in 1995<sup>3</sup> and Kari Lumme in Helsinki in 1997.<sup>4</sup>

We thank all speakers and attendees for their active participation in the conference, the members of the Scientific Organizing Committee and session chairpersons for their assistance in organizing and running the sessions, and Professor Prasad Varanasi, the Editor of JQSRT, for making this special issue possible. Financial support of the Conference was provided by the NASA Radiation Science Program managed by Robert Curran. We are grateful to the National Aeronautics and Space Administration, the American Meteorological Society, the American Geophysical Union, and the Optical Society of America for their sponsorship of the conference. We thank the Head of GISS James Hansen and former members of the AMS Committee on Atmospheric Radiation Thomas Charlock and Barbara Carlson for their support. We appreciate valuable assistance from Carl Codan, Evelyn DeJesus-Quiles, Michael Diggs, Mary Larson, Carolyn Paurowski, Robert Schmunk, Nadia Zakharova, and many employees of Science Systems and Applications, Inc.

Finally, we commend the authors for their efforts in preparing the outstanding papers included in this special issue and the reviewers listed below for generously providing their time and expertise. We hope that the readers will find this representative collection of papers a useful and stimulating update on the subject of electromagnetic scattering by nonspherical particles and its applications.

#### CONVENERS

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